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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/803,103      | 03/18/2004  | Paivi Valve          | 60282.00156         | 5312             |

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| EXAMINER |
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HAN, QI

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2626

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12/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                               |                              |  |
|------------------------------|-------------------------------|------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/803,103 | Applicant(s)<br>VALVE ET AL. |  |
|                              | Examiner<br>Qi Han            | Art Unit<br>2626             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed on 03/18/2004 (see in Declaration). It is noted, however, that applicant has not filed a certified copy of the instant application as required by 35 U.S.C. 119(b).

### *Specification and Drawing*

2. The disclosure is objected to because of the following:

a. on page 19, paragraph 85, the content "The 1.2 dB amplification...during 5 frames (200 samples)" is inconsistent with the legend "**subframe (40-samples)**" in Fig. 8, wherein  $5 \text{ (subframes)} \times 40 \text{ (samples)} = 200 \text{ samples}$ . Appropriate correction is required.

b. on page 23, paragraph 101, the recited "Equation 2.14" is missing, and the following mathematical reasoning for the equations lacks antecedent basis. Appropriate correction/clarification is required.

c. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Regarding claim 18, the limitation "said computer program product comprises a computer-readable medium on which said software code portions are store" is not disclosed in the specification.

Regarding claim 19, the limitation "said computer program product is directly loadable the internal memory of the computer" is not disclosed in the specification.

#### *Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 17, 19-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claims 17, 19-22, they claim a computer program product, which substantially drawn to or reasonably interpreted as a descriptive material per se, and directed to nonstatutory subject matter under 35 USC 101. Based on the specification disclosure (paragraph 14) and the claimed limitations, it is noted that, each of the claims, as whole, is noting more than claiming a computer program (code, software, instruction) itself, i.e. description material. The computer programs (codes) as computer listings per se, i.e., the descriptions or expressions of the program, are not physical "thing"; and since a computer program is merely a set of instructions capable of

being executed by a computer, the computer program (code) itself is not a process either. Thus, a computer program per se is treated as nonstatutory functional descriptive material. Therefore, the claims, as whole, are directed to non-statutory subject matter.

5. To expedite a complete examination of the instant application the claims rejection under 35 U.S.C 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 18-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18, recites the limitation "**said software code portions**". There is insufficient antecedent basis for this limitation in the claim(s).

Claim 19, recites the limitation "**the internal memory**". There is insufficient antecedent basis for this limitation in the claim(s).

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 18, the claimed limitation "said computer program product comprises a computer-readable medium..." lacks enablement, since the closest disclosure "...the product run on a computer" (see the specification: page 4, lines 16-17) clearly suggests that the product is computer program/software to one of ordinary skill in the art and it is common knowledge in the art that computer software cannot comprise computer-readable medium (hardware). Therefore, the claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 3, 5, 7, 9, 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over CEZANNE et al. (US 2004/-243404 A1) hereinafter referenced as CEZANNE in view of ERIKSSON et al. (US 2002/0184010 A1) hereinafter referenced as ERIKSSON.

As per **claim 1**, CEZANNE discloses ‘method and apparatus for improving voice quality of encoded speech signals in a network’ (title) applicable to ‘adaptive multi-rate (AMR) codec’ described in ‘3GPP TS 26.090’ in which the encoded signals includes “indices which represent audio signal parameters which comprise at least a first parameter representing a first characteristic of the audio signal and a second parameter” (p(paragraph)31-p33 and Table 1), comprising:

“determining a current first parameter value from an index corresponding to a first parameter” (p9, ‘voice quality enhancements such as noise compensation, noise reduction, automatic level control, and acoustic echo control’ performed by modifying selected encoded speech parameters including ‘excitation gain or the vocal tract parameters’; p32-p33 and Table 1, ‘fixed and adaptive codebook parameters (include first parameter)’, ‘fixed codebook index’, ‘fixed codebook gain’; p39, ‘fixed codebook excitation gain (current first parameter value) is extracted (determined)’);

“adjusting the current first parameter value in order to achieve an enhanced first characteristic, thereby obtaining an enhanced first parameter value” (p39, ‘the fixed codebook excitation gain is increased (adjusted) by the amount of the noise compensation gain ... to compensate for the near-end noise (achieve an enhanced first characteristic)’);

“determining a new index value from a table relating index values to first parameter values [and relating the index values to second parameter values], such that a new first parameter value corresponding to the new index value [and a new second parameter value corresponding to the new index value] substantially match the enhanced first parameter value [and the current second parameter value]” (p38-p40, ‘the compensation gain computed...based on the noise level

estimate'; p39, 'the original fixed codebook excitation gain is replaced with the modified fixed codebook excitation gain', 'it may be sufficient to extract only the fixed codebook gain table indices (substantially match the enhanced first parameter value) ', 'for example, in the AMR codec...may operate directly on the fixed codebook gain table indices bits (new index values)...').

CEZANNE does not **expressly** disclose "determining a current second parameter value from the index further corresponding to a second parameter" and using the second parameter for determining the new index value. However, this feature is well known in the art as evidenced by ERIKSSON who, in the same field of endeavor, discloses 'noise suppression' (title), comprising 'modification of parameters in the coded bit-stream' (p33-p57) using 'fixed codebook gain', 'gain correction factor (also corresponding to first parameter value)', 'gain factor modified', finding 'the index of the codeword closest (match) to' new gain correction factor and overwrite (replace) the original fixed codebook gain correction index', and teaches that 'in some coding modes with lower bit-rate they are vector quantized' and 'the adaptive codebook gain (second parameter) will also be modified (determined with new value) by the noise suppression'. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize that the ARM method described in 3GPP TS 26.090 inherently uses a jointly quantized vector (corresponding to the index) associating with the correction factor and adaptive codebook gain (second parameter value) for lower bit-rate coding, and to modify CEZANNE by providing modifying the adaptive codebook gain with the first parameter value (such as the correction factor) associated the index for the vector quantization, as suggested by ERIKSSON, for the purpose (motivation) of improving speech quality for system with



transcoder free operation and/or for some coding modes with lower bit-rate (ERIKSSON: p4 and p57).

As per **claim 3** (depending on claim 1), CEZANNE in view of ERIKSSON further discloses “replacing a current value of the index corresponding to at least the first parameter by the determined new index value” (CEZANNE: p39-p40; ERIKSSON: p56)

As per **claim 5** (depending on claim 1), CEZANNE in view of ERIKSSON further discloses “determining the new index value from the table such that a substantial match of the current second parameter value has precedence” (CEZANNE: p39-p40; ERIKSSON: p56-57).

Regarding **claims 7, 9 and 11**, they recite an apparatus. The rejection is based on the same reason described for method claims 1, 3 and 5, because the claims recite the same or similar limitations as claims 1, 3 and 5, respectively.

Regarding **claims 17**, it recites a computer program product. The rejection is based on the same reason described for method claim 1, because the claim recites the same or similar limitations as claim 1.

9. Claims 2, 4, 6, 8, 10, 12-16 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over CEZANNE and CEZANNE applied to claim 1, and further in view of admitted prior art disclosure (see specification: paragraphs 59-64) hereinafter referenced as **ADMISSION**.

As per **claim 4** (depending on claim 1), even though CEZANNE in view of ERIKSSON disclose ‘noise compensation gain (background noise parameter value) is computed (determined)...based on the noise level estimate’ and using ‘fixed codebook gain indices’

(CEZANNE: p38 and p40; ERIKSSON: p56), CEZANNE in view of ERIKSSON does not **expressly** disclose the background noise parameter value being an **index** value (current or new). However, the feature is well known in the art as evidenced by ADMISSION who using 'average background noise information...described in 3GPP TS 26.092...' and 'frame energy' calculation and quantization with 'index' (see specification: p59-p64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify CEZANNE in view of ERIKSSON by providing the background noise level with associated quantization index, as taught by ADMISSION, for the purpose (motivation) of the correct operation of background noise evaluation, noise parameter encoding/decoding and comfort noise generation for the AMR speech codec system, and/or improving/enhancing speech quality for the system with transcoder free operation (CEZANNE: p6; ERIKSSON, p7).

Regarding **claim 2**, the rejection is based on the same reason described for claims 1 and 4, because the claim recites the same or similar limitations as claims 1 and 4.

Regarding **claim 6** (depending on claim 2), the rejection is based on the same reason described for claim 3, because the claims recites the same or similar limitations as claim 3.

Regarding **claims 8 and 12**, they recite an apparatus. The rejection is based on the same reason described for method claims 2 and 6, because the claims recite the same or similar limitations as claims 2 and 6, respectively.

Regarding **claim 10** (depending on claim 7), the rejection is based on the same reason described for claim 4, because the claims recites the same or similar limitations as claim 4.

Regarding **claim 13**, the rejection is based on the same reason described for claims 1 and 4, because the claim recites the same or similar limitations as claims 1 and 4.

Regarding **claim 14**, it recites an apparatus. The rejection is based on the same reason described for method claim 13, because the claim recites the same or similar limitations as claim 13.

Regarding **claim 15**, the rejection is based on the same reason described for claims 1 and 4, because the claim recites the same or similar limitations as claims 1 and 4.

Regarding **claim 16**, it recites an apparatus. The rejection is based on the same reason described for method claim 15, because the claim recites the same or similar limitations as claim 15.

Regarding **claim 20**, it recites a computer program product. The rejection is based on the same reason described for method claim 2, because the claim recites the same or similar limitations as claim 2.

Regarding **claim 21**, it recites a computer program product. The rejection is based on the same reason described for method claim 13, because the claim recites the same or similar limitations as claim 13.

Regarding **claim 22**, it recites a computer program product. The rejection is based on the same reason described for method claim 15, because the claim recites the same or similar limitations as claim 15.

10. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over CEZANNE and CEZANNE applied to claim 17, and further in view of ETTER (US 2005/0071154 A1).

As per **claims 18 and 19** (depending on claim 17), as best understood in view of the rejection under 35 USC 112 1<sup>st</sup> and/or 2<sup>nd</sup> (see above), CEZANNE in view of ERIKSSON does

not **expressly** disclose "computer-readable medium on which [said the] software code portions are stored" (for claim 18) and "computer program product (software) is directed loadable into [the] internal memory of the computer" (for claim 18). However, the feature is well known in the art as evidenced by ETTER who, in the same field of endeavor, discloses 'method and apparatus for estimating noise in speech signals' (title), comprising using partially decoded speech 'to extract both the fixed codebook gain parameter and the adaptive codebook gain parameter' with 'scaling (modifying) factor' (p7), using 'AMR speech codec' (p18), and providing 'computer readable medium and so executed by computer or processor' and 'hardware capable of executing software', 'read-only memory for storing software', 'random access memory (internal memory that is directly loadable) and non-volatile storage', 'software module software code portions' (p47-p49), which suggests the system has capability of implementing the functionality as claimed. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify CEZANNE in view of ERIKSSON by providing computer readable medium and internal memory (such as RAM) for storing and loading relating software, as taught by ETTER, for the purpose (motivation) of executing the various coding/decoding processes by a computer and/or implementing the equivalent functionalities by various means (ETTER, p47 and p50).

### *Conclusion*

11. Please address mail to be delivered by the United States Postal Service (USPS) as follows:

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Application/Control Number:  
10/803,103  
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qi Han whose telephone numbers is (571) 272-7604. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: [ebc@uspto.gov](mailto:ebc@uspto.gov). For general information about the PAIR system, see <http://pair-direct.uspto.gov>.

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